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| EXAMINER |
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JACOBS, TODD D

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| ART UNIT | PAPER NUMBER |
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3746

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06/18/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/530,071 | Applicant(s) GOTTSCHALK, ANDREAS | |
| | Examiner TODD D. JACOBS | Art Unit 3746 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 11-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9 and 11-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/28/2010 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 21-22, 24-26, 35-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaplan (4,909,710).

4. In re claims 21, 25, 35, Kaplan discloses a pumping apparatus with a peristaltic drive device containing a one piece shaft (34) comprising a single piece of material with integral cams (40), the shaft having a continuous core region of less than 3mm (the inner-most 3mm is considered the core region), wherein the integral cams are arranged to be offset from one another and defining a stroke and a diameter (in this case, the stroke/diameter appear to be equal to one another in a 1:1 ratio; note that these are offset by being at different points along the axial distance of the shaft, as well as being at offset radial/circumferential positions as shown in Fig 2), wherein the shaft being configured to guide movement of the lamellae in both forward and backward directions (note that when moving the lamellae between 0-180 is considered forward, and 180-360 is considered backward). Note that if applicant intends the

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core region to be something else, i.e. a small overlap of the cams in operation when viewing in the axial direction, then applicant should detail the claim as much. Examiner strongly encourages this detail to be made. As claimed the "core region", etc, is quite broad; it should be further defined in detail if applicant wishes to have patentable subject matter.

5. In re claim 22, Kaplan discloses a counter-pressure plate (44).
6. In re claim 24, 36-37, Kaplan discloses wherein the arrangement of the cams defines an outer diameter and a stroke wherein the ratio between the outer diameter and the stroke is 4:1 (in Kaplan's case, it appears to be at least less than 2:1 or at or less than 1:1).
7. In re claim 26, Kaplan discloses where an odd or even amount of cams are provided.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3-9, 11-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magnus 5,558,507 in view of Itabashi et al (5676192) or Nakamura et al (5778530) or Smith et al (6289764).

9. In re claims 1, 5-6, 11, 16-18, Magnus teaches a pumping apparatus with a peristaltic drive device for pumping a medium through a hose (4) having at least one compressible portion, containing a one-piece shaft (figure 3) with integral cams (7) arranged so as to be offset with respect to one another and with attached lamellae (2), the shaft being configured to guide movement of the lamellae in both forward and backward directions (since the lamellae are attached to the asymmetrically designed shaft, as the shaft turns from 0 degrees to 180 degrees, the lamellae are guided in a forward direction, and as the shaft turns from 180 degrees towards

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360/0 degrees, the lamellae are guided in a backward direction), wherein the cams are cam segments, and wherein the shaft is without a core region (this is interpreted to be that there is no single solid crankshaft upon which the cam segments are mounted as shown in figure 5) and essentially without a continuous core region. If applicant intends something else by "core region", it should be stated as such in the claims. For example, if applicant wishes the claim, i.e. "without a core region, such that an imaginary line running through the rotational axis of the shaft does not contact each and every cam" then the claim should state as much.

10. Magnus fails to teach that the one-piece shaft comprises a single homogenous piece of material. Smith et al, Nakamura et al and Itabashi et al all teach integrally cast cam shafts made of a homogenous piece of material. It would have been obvious to one of ordinary skill in the art at the time of the invention to have made the shaft and cams of Magnus from one-piece as taught by Smith et al, Nakamura et al and Itabashi et al as a design choice and since it has been held that making in one-piece which has formerly been multiple pieces is a matter of obvious engineering choice. In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

11. In re claims 3-4 and 15, Magnus also teaches a counter pressure plate 6 for applying the hose, and for supporting the pressure exerted on the hose by the lamellae wherein the counter pressure plate is sprung within the housing of the apparatus by one ore more springs (column 4, lines 22-27), and also generating a sinusoidal pinching movement of the lamellae as clearly shown in figure 1.

12. In re claims 7-8 and 12-13 Magnus also suggests assembling the shaft structure in whatever structure is required for varying squeezing contours resulting in varying pumping rates and amounts (see column 4, lines 28-36). Also, Magnus fails to make explicit mention of that the cam segments are offset with respect to one another in such a way that only one cam

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segment is at a maximum distance from an imaginary line of the shaft and a uniform offset of the cam segments is provided. However, such a structure is a mere rearrangement of parts and it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70 and Magnus discuss rearranging the cams and structuring the eccentric shaft in a manner corresponding to a desired squeezing contour for the purpose of achieving a desired pumping rate and volume (see column 4, lines 28-36). In likewise fashion, the desire to pinch the hose so that a volume can be enclosed in leak-tight manner at the first and last cam segment and the remaining lamellae serve for the reduction in volume or wherein the first and last lamellae are switched as a valve and the remaining lamellae are set in such a way that in any position, at least a narrow gap remains between the walls of the hose acted upon by the lamellae results only in a mere rearrangements of parts. It has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70 and such a rearrangement is suggested by Magnus for the purpose of adjusting the desired squeezing contour and therefore, the desired pumping rate and volume (see column 4, lines 28-36).

13. In re claim 9, see Magnus col. 1 lines 59-62.

14. In re claim 19, Magnus teaches the invention as claimed and teaches wherein the ratio of the lamellae height to the lamellae stroke ranges from *about* (emphasis added) is 4:1 to 1:1. Note that, and not discrediting the previous statement, Magnus does not fully disclose the ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to reach such a ratio, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

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15. In re claim 20, Magnus discloses the cam segments defining a continuous core orifice in the region of a center line (space between W and 1 as shown in Fig 1 of Magnus; also could be any one of item 9 in Fig 5). Note again that “in the region of a center line” firstly doesn’t designate a particular center line and secondly “region” is exceptionally broad and could encompass a very large area.

16. In re claims 21-23, 25-26, 30-32, 34, the limitations are met entirely by the references as discussed in the rejections above including the teaching of a core region less than 3 mm; in this case, the core region is interpreted to be the innermost 3mm of the spinning shaft. Again, if applicant wishes to have a different interpretation, applicant is encouraged to limit the scope of the claim by adding in detail to the claims.

17. In re claim 14, 33 again, note that as the lamella move between 0-180° it is interpreted to be pumping in a forward direction and as the lamella go from 180°-360° it is interpreted to be pumping in a reverse/backward direction. Also, see alternate rejection below regarding this claim.

18. In re claims 27-28, 30 Magnus also suggests assembling the shaft structure in whatever structure is required for varying squeezing contours resulting in varying pumping rates and amounts (see column 4, lines 28-36). Also, Magnus fails to make explicit mention of that the cam segments are offset with respect to one another in such a way that only one cam segment is at a maximum distance from an imaginary line of the shaft and a uniform offset of the cam segments is provided. However, such a structure is a mere rearrangement of parts and it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70 and Magnus discuss rearranging the cams and structuring the eccentric shaft in a manner corresponding to a desired squeezing contour for the purpose of achieving a desired pumping rate and volume (see column 4, lines 28-36). In likewise fashion, the desire to

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pinch the hose so that a volume can be enclosed in leak-tight manner at the first and last cam segment and the remaining lamellae serve for the reduction in volume or wherein the first and last lamellae are switched as a valve and the remaining lamellae are set in such a way that in any position, at least a narrow gap remains between the walls of the hose acted upon by the lamellae results only in a mere rearrangements of parts. It has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70 and such a rearrangement is suggested by Magnus for the purpose of adjusting the desired squeezing contour and therefore, the desired pumping rate and volume (see column 4, lines 28-36).

19. In re claim 29, see Magnus col. 1 lines 59-62.

20. In re claim 24, 35-37 the stroke/diameter of Magnus appear to be equal to one another in a 1:1 ratio or with some cams it appears that the outer diameter to stroke ratio is less than 1:1. Even if this were not true, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have this ratio be less than 4:1 since the claimed values are merely an optimum value. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Also see *In re Aller*, 105 USPQ 233 because optimum ranges are also obvious variants.

21. Claims 14, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magnus 5,558,507 in view of Itabashi et al (5676192) or Nakamura et al (5778530) or Smith et al (6289764) and further in view of Romanelli et al. 4,755,168.

22. Magnus teaches the invention as claimed and as discussed above but, without taking away from the above, may fail to teach the following claimed limitation as taught by Romanelli: a pumping of fluid in two directions for the purpose of performing both drainage and irrigation (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of

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the invention to have provided the structure of Magnus with a pumping of fluid in two directions for the purpose of performing both drainage and irrigation (Abstract).

Response to Arguments

23. Applicant's arguments filed have been fully considered but are moot based on a new interpretation of prior art as shown above. Examiner has noted above that the core region as claimed is entirely too broad. Aside from a potential USC 103 rejection made with no art citing obviousness, the way the core region is described in the specification and shown in the drawings appears to be novel. No art specifically shows the cams situated as shown, wherein a core region is as small as 3mm or is non-existent. However, it is not claimed in enough detail for the "core region" to be limited to what is shown in the drawings and described in the specification.

24. Examiner recommends adding fully sufficient (and it may take quite a bit of wording) limitations to describe the core in order to move prosecution forward effectively. Regarding the limiting/defining of core region further, however, examiner notes that as seen in the instant application's figures, there may be confusion when discussing the center line, shaft, and an opening through the shaft to describe a vacant spot called the core. That is because the ends of the shaft, items 10 and 11, do not have this gap and preclude the entire shaft from having this core. Applicant should make sure that the core region is limited to the cam section of the shaft.

25. Applicant should also note that when making future amendments, please ensure that there are no USC 112 errors currently in the application, and please do not add any when amending the claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TODD D. JACOBS whose telephone number is 571-270-5708. The examiner can normally be reached on Monday - Friday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit
3746

/TODD D. JACOBS/
Examiner, Art Unit 3746